What is claimed is:

1. Apparatus for controlling the path of oscillatory travel of a device within a two-axis system, said device being fixed to a two degree-of-freedom gyroscope that includes a first forcer for applying a torque with respect to a first rotor axis in response to a first signal to precess the rotor about a second, orthogonal rotor axis and a second forcer for applying torque to said rotor with respect to said second rotor axis in response to a second signal, wherein the angular displacement of said rotor from a null position generates a signal for activating motion to position said device within said two-axis system, said apparatus comprising at least one cross-axis circuit for receiving said first signal and generating said second signal in response thereto so that said second signal drives said second forcer to precess said rotor with respect to said first axis to substantially cancel the effect of torque applied by said first forcer with respect to said first axis of said rotor.

2. Apparatus as defined in Claim 1 wherein said at least one cross-axis circuit generates said second signal comprising the derivative of said first signal.

Sub B17 3. Apparatus as defined in Claim 2 wherein the gain of said at least one cross-axis circuit is inversely proportional to the nutation frequency of said rotor.

4. Apparatus as defined in Claim 1 wherein the transfer function $T(s)$ of said at least one cross-axis circuit is

$$T(s) = Ks/(s + 2\pi k f_{nut})$$

where k is an integer and f_{nut} is the nutation frequency of said rotor.

5. Apparatus as defined in Claim 1 wherein said at least one cross-axis circuit comprises an operational amplifier.

6. Apparatus as defined in Claim 5 wherein said at least one cross-axis circuit comprises an operational amplifier including a feedback resistor in parallel with a feedback capacitor.

7. Apparatus as defined in Claim 1 further comprising a second cross-axis circuit arranged to receive said second signal and to generate said first signal in response thereto.

8. Apparatus as defined in Claim 7 wherein each cross-axis circuit generates an output signal comprising the derivative of an input signal.

9. Apparatus as defined in Claim 8 wherein the gain of each cross-axis circuit is inversely proportional to the nutation frequency of said rotor.

10. Apparatus as defined in Claim 7 wherein the transfer function T(s) of each of said cross-axis circuits is

$$T(s) = Ks/(s + 2\pi k f_{nut})$$

where k is an integer and f_{nut} is the nutation frequency of said rotor.

11. Apparatus as defined in Claim 7 wherein each of said cross-axis circuits comprises an operational amplifier.

12. Apparatus as defined in Claim 11 wherein each of said cross-axis circuits comprises an operational amplifier including a feedback resistor in parallel with a feedback capacitor.

13. Apparatus for substantially nulling the effect of torque applied to precess the spinning rotor of a gyroscope comprising:

a) a first forcer for applying a torque with respect to a first axis of said rotor in response to a first signal;

b) a second forcer for applying a torque to said rotor with respect to a second axis, orthogonal to said first axis, in response to a second signal; and

c) a cross-axis circuit for receiving said first signal and generating said second signal in response so that said second signal drives said second forcer to precess said rotor with respect to said first axis to substantially cancel the effect of torque applied to said rotor with respect to said first axis by said first forcer.

14. Apparatus as defined in Claim 13 wherein said cross-axis circuit generates said second signal comprising the derivative of said first signal.

15. Apparatus as defined in Claim 13 wherein the transfer function of said cross-axis circuit is

$$Ks/(s + 2\pi k f_{nut})$$

where k is an integer and f_{nut} is the nutation frequency of said rotor.

16. Apparatus as defined in Claim 13 wherein said cross-axis circuit comprises an operational amplifier including a feedback resistor in parallel with a feedback capacitor.

17. A method for nulling a first torque applied by a first forcer with respect to a first axis of a spinning gyroscope rotor to precess the rotor with respect to a second, orthogonal axis of the rotor, said method comprising the step of applying a second torque with respect to said second axis of said rotor to precess said rotor with respect to said first axis to substantially cancel the effect of said torque applied to said rotor with respect to said first axis by said first forcer.

18. A method as defined in Claim 17 wherein said torque applied to said rotor with respect to said second axis comprises the derivative of said torque applied with respect to said first axis of said rotor.

19. A method as defined in Claim 18 wherein said torque applied with respect to said second axis of said rotor is a function of the nutation frequency of said rotor.

20. A method as defined in Claim 17 wherein the torque applied with respect to said second axis of said rotor is related to the torque applied with respect to said first axis of said rotor by

$$Ks/(s + 2\pi k f_{nut})$$

where f_{nut} is the nutation frequency of said rotor.

Add B1